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Lauren Haines

Cedarville University, laurenhaines@cedarville.edu

Neal S. Fox

Cedarville University, nfox@cedarville.edu

Rachel Bull

Cedarville University, rrbull@cedarville.edu

Jeb Ballentine

Cedarville University, jballentine@cedarville.edu

Zachary Jenkins

Cedarville University, zjenkins@cedarville.edu

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Medication Reconciliation of Medically-Complex Emergency Department Patients by Second-Year Professional Pharmacy Students

Rachel Bull, Neal Fox, Lauren Haines, Dr. John Ballentine, and Dr. Zachary Jenkins
Cedarville University School of Pharmacy



STATEMENT OF THE PROBLEM

Background

- A transition of care is “The movement of a patient from one setting of care (hospital, ambulatory primary care practice, ambulatory specialty care practice, long-term care, home health, rehabilitation facility) to another.”¹
- A medication reconciliation is “The process of identifying the most accurate list of all medications that the patient is taking, including name, dosage, frequency, and route, by comparing the medical record to an external list of medications obtained from a patient, hospital, or other provider.”¹
- A medication reconciliation can be performed by pharmacists, pharmacy students, nurses, or physicians.
- Research has shown pharmacy students have been more accurate in obtaining patient medication histories compared to physicians and nurses, which aids in a more complete medication reconciliation.²
- Previous research of fourth-year professional pharmacy students performing medication reconciliation in their advanced pharmacy practice experiences has been conducted to determine their competence, but second-year students have not yet been evaluated in this manner.

Significance of the Problem

- Transitions of care are commonly associated with many serious problems, including potential medication errors, which are recognized nationally by professional organizations.
- Medication reconciliation is an integral part of the Joint Commission’s National Patient Safety Goals (NPSG) 2014 for hospitals. NPSG 03.06.01 states, “maintain and communicate accurate patient medication information.”³
- Errors and discrepancies that occur throughout care transitions due to poor medication reconciliations have potential to cause adverse drug reactions.⁴
- Over two million serious adverse drug reactions (ADRs) occur yearly, resulting in approximately 100,000 deaths.⁵
- Second-year professional pharmacy students have the potential to perform more cost-effective medication reconciliations, while also enhancing patient care.

OBJECTIVES

Primary Objective: To determine the effect of second-year pharmacy student medication reconciliation on high-risk patients undergoing transitions of care within the emergency department compared to fourth-year pharmacy students in the literature.

Secondary Objective: To determine the impact on patient 30-day readmission rates.

HYPOTHESES

Alternative Hypothesis for Primary Objective: There is a difference between the outcomes of second-year and fourth-year pharmacy student medication reconciliation.

Null Hypothesis for Primary Objective: There is no difference between the outcomes of second-year and fourth-year pharmacy student medication reconciliation.

REFERENCES

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PROPOSED METHODS

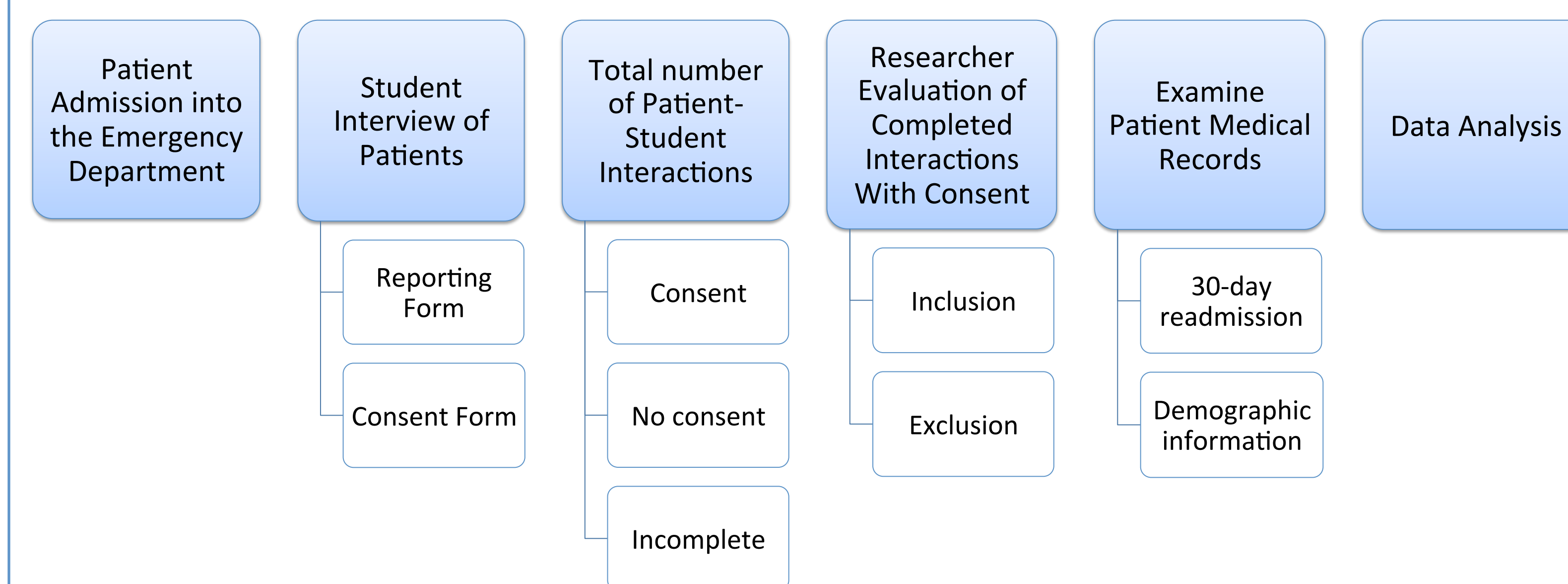
Study Design

- Historical, longitudinal observational study

Sample

- Purposive sampling
- **Inclusion criteria:**
 - High-risk patients
 - Emergency department patients
 - Patients reviewed by second-year professional pharmacy students (P2)
 - Patients at Miami Valley Hospital or Grandview Medical Center located in Dayton, Ohio
- **Exclusion criteria:**
 - Patients < 21 years old
 - Patients who refuse consent to be a part of the study
 - Patients unable to complete an interview with the pharmacy student

Data Collection



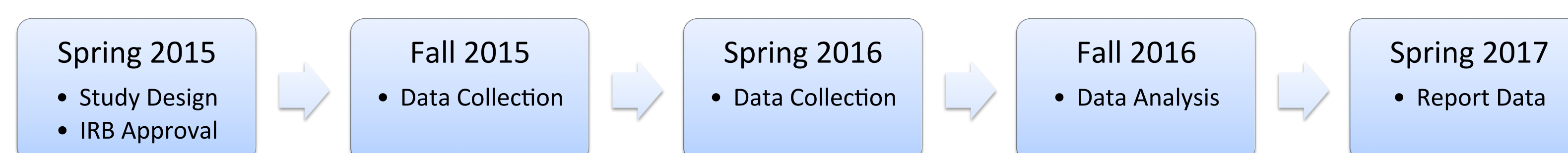
Measurement

- Proposed interventions
- Medication discrepancies
- Patient 30-day readmission rates

PROPOSED ANALYSES

- **Descriptive:** Mode, mean, and standard deviation
- **Statistical Analysis:** One-sample *t*-test

PROJECT TIMELINE



LIMITATIONS

- Due to resource and ethical concerns, we did not have a control group to compare to the patients receiving medication reconciliation from second-year student pharmacists.
- The comparison to APPE students in the literature is weakened by differences in setting and training.
- The researchers were not able to oversee every patient encounter to ensure that proper procedures were followed.
- Different institutions may have different internal procedures and definitions that hamper the standardization of data collection.

FUTURE DIRECTIONS

- Direct comparison of medication reconciliation between pharmacists, fourth-year pharmacy students, and second-year pharmacy students
- Comparing second-year pharmacy student medication reconciliation to nurses and physicians
- Providing information about care transitions to patients to reduce preventable errors